

**REMARKS**

Together with this Submission, Applicants have concurrently submitted

- a Request for Continued Examination,
- a Declaration under 37 C.F.R. § 1.132 by Dr. Plos,
- a certified copy of the French foreign priority document (FR 98/00258) and
- a copy of one page of the partially considered PTO-1449 filed Nov. 6, 2000.

In light of the following remarks and the Declaration submitted herewith,

Applicants respectfully request reconsideration of the pending rejection.

**I. Status of the Claims and Information Disclosure Statement**

Claims 33-36, and 38-69 are pending. No claim is amended.

Applicants filed an Information Disclosure Statement and PTO-1449 on November 6, 2000. The Examiner considered all but one of the documents listed in the PTO-1449 in the Final Office Action mailed January 8, 2002. Applicants thank the Examiner for considering the listed documents, and ask that the Examiner to indicate consideration of document 100 of the aforementioned PTO-1449 by initialing and newly signing and dating that page of the PTO-1449. Applicants have attached a copy of the page listing document 100 and would greatly appreciate an initialed and newly signed copy of that page with the next communication.

**II. Rejection under 35 U.S.C. § 103(a)**

Claims 32-36, 38-41, 43, 44, 49, 50 and 56-69 are rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Aaslyng et al. (WO 97/19998) ("Aaslyng") in view of de la Mettrie (U.S. 5,989,295) ("de la Mettrie"). Final Office Action dated August 13, 2003, p. 3.

Applicants respectfully submit that the §103(a) rejection is improper for at least the reasons of record and additionally because (1) de la Mettrie does not qualify as prior art pursuant to 35 U.S.C. § 103(c), and (2) the Declaration of Mr. Plos supports Applicants' position that a prima facie case of obviousness has not been made.

**De la Mettrie is not prior art under 35 U.S.C. § 103(c)**

35 U.S.C. §103(c) states

Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

In the present case, de la Mettrie is not available as a reference under 35 U.S.C. § 103(c). More specifically, Applicants aver that de la Mettrie and the present application were subject to an obligation of assignment to, or were commonly owned by the same assignee, L'Oréal, at the time the present invention was made. Thus, pursuant to M.P.E.P. § 706.02(I)II, Applicants have now, with this statement, provided

sufficient evidence regarding common ownership. Further, as shown below, de la Mettrie is a reference “which qualifies as prior art only under” 35 U.S.C. §102(e).

A reference falls under §102(e) when it is, e.g., “a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent.” 35 U.S.C. §102(e)(2). Here, the international filing date of the present application is December 22, 1998, with a foreign priority filing date of January 18, 1998. de la Mettrie issued on November 23, 1999 (after the present application was filed), from an application filed on December 18, 1997 (before the present application). To perfect their claim of priority, Applicants have attached a certified copy of the French foreign priority document (FR 98/00258), filed in France on January 18, 1998. A certified English translation has been ordered for the certified copy of FR 98/00258 and will be submitted to the Office as soon as it becomes available.

Thus, for at least this reason, the rejection should be withdrawn.

#### **No Prima Facie Case of Obviousness has been made**

In the prosecution of this case, the Examiner has relied on Aaslyng, the primary reference, for its teaching of hair dye compositions comprising heterocyclic oxidation bases, laccase enzymes, and couplers. The Examiner has acknowledged that Aaslyng fails to teach, among other things, the claimed heterocyclic couplers, and has relied on the teachings of de la Mettrie to make up for the deficiencies of the primary reference. In the Final Office Action dated August 13, 2003, the Examiner states that de la Mettrie “as a secondary reference teaches clearly the equivalence of heterocyclic oxidation bases and benzenic oxidation bases. . . and also teaches the equivalence of

heterocyclic couplers and benzenic couplers in the dyeing composition . . .” Pages 2-3.

The Examiner also contends that “there is a motivation to combine. . . the references with a *reasonable expectation of success* in order to obtain a very wide range of colors, and, thus, a person of the ordinary skill in the art would *expect* such a composition to have similar properties to those claimed. *Id.*, at page 3 (emphasis added).

Applicants disagree with the Examiner, because they do not believe that he has successfully established a prima facie case of obviousness. To do so, the Examiner must show that there is, among other things, a reasonable expectation of success in making the proposed combination of references. Applicants have concurrently submitted a Declaration by Mr. Plos pursuant to 37 C.F.R. § 1.132 which shows that indeed, no such reasonable expectation would have existed.

Specifically, the data in paragraph 5 of the Declaration show that compositions with a heterocyclic dye in the presence of a laccase enzyme (corresponding to the instantly claimed invention) provide a much more intense color than a benzenic oxidation dye in the presence of a laccase enzyme. This result would certainly not have been reasonably expected by one of ordinary skill in the art if, as the Examiner has repeatedly contended, heterocyclic oxidation bases and couplers are equivalent to benzenic oxidation bases and couplers.

The data in paragraph 6 show that a composition comprising a heterocyclic oxidation dye and a non-enzymatic oxidizing agent results in a hair color with a significantly lower chromatic value as compared to the composition corresponding to the presently claimed invention and comprising laccase and a heterocyclic oxidation dye.

Thus, the hair color is much more chromatic when the inventive compositions are used. This test shows that the disclosures of Aaslyng (using an enzymatic oxidizing agent) and de la Mettrie (using a non-enzymatic oxidizing agent) are not as easily combined as the Examiner suggests. If, as the Examiner implies, the enzymatic and non-enzymatic were just alternative oxidizing systems, then the above-discussed test results would not have shown different results for each system. Accordingly, this aspect of the invention also would not have been reasonably expected by one of ordinary skill.

Finally, the data in paragraph 7 show that the comparative composition comprising a heterocyclic oxidation dye and a non-enzymatic oxidizing agent results in a higher selectivity of the dyed keratin fibers compared to that of the composition corresponding to the presently claimed invention and comprising a heterocyclic oxidation dye and laccase. Because higher selectivity results in more color variation in the keratin fibers, it is not a desirable feature. This result would not have been predictable by one of ordinary skill in the art following the Examiner's reasoning.

In summary, the data submitted herewith make clear that the Examiner has not shown that there would have been a reasonable expectation of success for one of ordinary skill in the art to combine the cited references, and therefore, that the Examiner has failed to establish a prima facie case of obviousness.

**CONCLUSION**

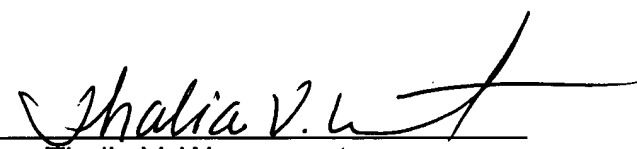
In view of the foregoing remarks and Declaration submitted herewith, Applicants respectfully request reconsideration of the rejection in this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,  
GARRETT & DUNNER, L.L.P.

Dated: September 13, 2004

By:   
Thalia V. Warnement  
Reg. No. 39,064

**Attachments:**

- certified copy of the French foreign priority document (FR 98/00258)
- a copy of the page of the partially considered PTO-1449 filed Nov. 6, 2000 listing unconsidered document 100.



PATENT

Customer No. 22,852

Attorney Docket No. 05725.0632-00

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Gérard LANG et al.

Application No.: 09/600,128

Filed: September 13, 2000

For: KERATINOUS FIBRE OXIDATION  
DYEING COMPOSITION CONTAINING  
A LACCASE AND DYEING METHOD  
USING SAME

Group Art Unit: 1751

Examiner: E. Elhilo

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**DECLARATION UNDER 37 C.F.R. § 1.132**

I, Grégory PLOS, declare and state that:

1. I am a French citizen, residing at Gluck Heim Yoga #206, 2-12-4 Yoga Setagaya-Ku, 158-0097, TOKYO, JAPAN.
2. I have been awarded a degree in Chemical Engineering from the Institut National Agronomique de Paris-Grignon.
3. I have been employed by L'ORÉAL since 1997 and I am presently a Research Engineer in the Hair Dyeing Applied Research Department at L'ORÉAL. During my employment at L'ORÉAL, I have been engaged in applied research and development regarding hair dyeing and compositions for the treatment of hair.

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4. Given my education and experience, particularly in the area of hair dyeing and compositions for the treatment of hair, I consider myself able to provide the following testimony based on the following additional experiments for the U.S. Application No. 09/600,128 conducted by me or under my direct supervision.

5. Comparative color testing was performed with inventive compositions 2 and 3 and comparative composition 1. The compositions were prepared as follows:

	Composition 1 (comparative)	Composition 2 (inventive)	Composition 3 (inventive)
Para- phenylenediamine	$3 \times 10^{-3}$ mole	$3 \times 10^{-3}$ mole	-
Resorcinol	$3 \times 10^{-3}$ mole	-	$3 \times 10^{-3}$ mole
2-methoxy-4,5-methylenedioxyaniline	-	$3 \times 10^{-3}$ mole	-
2,4,5,6-tetraaminopyrimidine	-	-	$3 \times 10^{-3}$ mole
Laccase	1 g	1 g	1 g
NaOH / HCl qs	pH 7	pH 7	pH 7
Demineralized water qs	100 g	100 g	100 g

Each of the resulting compositions was then applied to locks of natural hair containing 90% of white hair (5 g of composition per 1 g of hair). After 30 minutes at room temperature, the hair was rinsed with water and dried.

The color of the hair was determined by using the  $L^*a^*b^*$  system, with a MINOLTA CM3600d@ spectrophotometer (specular components included, light D65, angle  $10^\circ$ ). According to this system,  $L^*$  indicates the lightness of the color of the hair. The lower the value of  $L^*$ , the more intense the color of the hair. The chromaticity is expressed by the parameters  $a^*$  and  $b^*$ ;  $a^*$  indicates the axis of red/green shades and



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b\* indicates the axis of yellow/blue shades. The results are expressed in the following table.

	L*	a*	b*
Composition 1	54.6	3.0	21.3
Composition 2	30.6	2.2	8.5
Composition 3	50.8	17.5	11.6

These results show that the colors obtained from the compositions according to the invention, comprising a heterocyclic oxidation dye and a laccase-type enzyme, are more intense than the ones obtained from the comparison composition, comprising a benzenic oxidation dye and a laccase-type enzyme. The results have statistical significance, and the differences between the a\*, b\*, and L\* values are greater than the known error according to the above described color determination method. Thus, heterocyclic dyes and benzenic dyes are not equivalent when used in the presence of a laccase-type enzyme.

6. Comparative testing was performed with inventive composition 4 and comparative composition 5. The compositions were prepared as follows:

	Composition 4 (invention)	Composition 5 (comparative example)
Para-phenylenediamine	$3 \times 10^{-3}$ mole	$3 \times 10^{-3}$ mole
2-methoxy-4,5-methylenedioxyaniline	$3 \times 10^{-3}$ mole	$3 \times 10^{-3}$ mole
Laccase	1 g	-
Hydrogen peroxide	-	1 volume
NaOH / HCl qs	pH 7	pH 7
Demineralized water qs	100 g	100 g

Each of the resulting compositions was then applied to locks that were natural,

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permed, weakly bleached or highly bleached hair containing 90% of white hair (5 g of composition per 1 g of hair). After 30 minutes at room temperature, the hair was rinsed with water and dried.

The color of the hair was determined by using the L\*a\*b\* system, as described above. The chroma value C\* is calculated according to the following formula:

$$C^* = \sqrt{(a^{*2} + b^{*2})}$$

The higher the value of C\*, the more chromatic the color of the hair. The results are expressed in the following tables.

Natural hair			
	a*	b*	C*
Composition 4 (inv)	2.2	8.5	8.78
Composition 5 (comp)	1.3	3.0	3.27

Permed hair			
	a*	b*	C*
Composition 4 (inv)	1.8	6.5	6.74
Composition 5 (comp)	0.4	0.8	0.90

Weakly bleached hair			
	a*	b*	C*
Composition 4 (inv)	3.9	5.4	6.66
Composition 5 (comp)	0.0	-0.1	0.10

Highly bleached hair			
	a*	b*	C*
Composition 4 (inv)	2.1	3.1	3.74
Composition 5 (comp)	0.0	0.0	0.0

These examples show that the colors obtained from the compositions according to the invention, comprising a heterocyclic oxidation dye and a laccase-type enzyme, are more

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chromatic than the ones obtained from the compositions according to US 5 989 295, comprising a heterocyclic oxidation dye and a non-enzymatic oxidizing agent. The results have statistical significance, and the differences between the  $a^*$ ,  $b^*$ , and  $C^*$  values are greater than the known error according to the above described color and chroma value determination methods.

7. Comparative color variation testing was performed using inventive composition 6 and comparative composition 7. The compositions were prepared as follows:

	Composition 6 (inv)	Composition 7 (comp)
Resorcinol	$3 \times 10^{-3}$ mole	$3 \times 10^{-3}$ mole
2,4,5,6-tetraaminopyrimidine	$3 \times 10^{-3}$ mole	$3 \times 10^{-3}$ mole
Laccase	1 g	-
Hydrogen peroxide	-	1 volume
NaOH / HCl qs	pH 7	pH 7
Demineralized water qs	100 g	100 g

Each of the resulting compositions was then applied to locks of natural and highly bleached hair containing 90% of white hair (5 g of composition per 1 g of hair). After 30 minutes at room temperature, the hair was rinsed with water and dried.

The color of the hair was determined by using the  $L^*a^*b^*$  system, as described above. The color variation between a colored lock of highly bleached hair containing 90% of white hair and a colored lock of natural hair containing 90% of white hair is designated  $\Delta E$ ;  $\Delta E$  is calculated according to the following formula:

$$\Delta E = \sqrt{(L^* - L_0^*)^2 + (a^* - a_0^*)^2 + (b^* - b_0^*)^2}$$

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$L^*$  indicates lightness, and  $a^*$  and  $b^*$  are the chromaticity coordinates of the colored locks of highly bleached hair containing 90% of white hair.  $L_0^*$  indicates the lightness, and  $a_0^*$  and  $b_0^*$  are the chromaticity coordinates of the colored locks of natural hair containing 90% of white hair. The lower the value of  $\Delta E$ , the less selective the color of the hair. The results are expressed in the following table.

	Natural hair			Highly bleached hair			$\Delta E$
	$L_0^*$	$a_0^*$	$b_0^*$	$L^*$	$a^*$	$b^*$	
Comp. 6	50.8	17.5	11.6	48.8	28.7	23.5	16.46
Comp. 7	48.5	15.7	12.0	41.0	30.1	22.6	19.39

These examples show that the colors obtained from the compositions according to the invention, comprising a heterocyclic oxidation dye and a laccase-type enzyme, are less selective than the ones obtained from the compositions according to US 5 989 295, comprising a heterocyclic oxidation dye and a non-enzymatic oxidizing agent. The results have statistical significance, and the differences between the  $a^*$ ,  $b^*$ ,  $L^*$ , and  $\Delta E$  are greater than the known error according to the above described color, lightness and selectivity determination methods.

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9. I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: 2004/09/18  
Grégory Pios

By: Grégory Pios